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POLICY BRIEF

NAVIGATING FOOD QUALITY
IN THE FACE OF CLIMATE CHANGE

ALBANIA



POLICY BRIEF

Navigating Food Quality in the Face of Climate Change

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Background

Climate change affects both long-term trends over decades or centuries and shorter-term variations such as precipitation and temperature changes, leading to extreme events like droughts, floods, and storms. In Albania, climate change has significant implications for agriculture, a sector crucial to the country's economy and employment. Agriculture contributes nearly one-fifth of Albania's Gross Domestic Product and employs about one-third of the population, with the sector playing a vital role in supporting rural livelihoods.

There is a gradual shift towards larger market-oriented farms, and the export of agrifood products has been on the rise. However, challenges persist, including a substantial trade deficit and difficulties in accessing markets, particularly for small-scale farmers which still dominate the Albanian agriculture sector. Compliance with standards is crucial for market access, both domestically and internationally, with consumers increasingly demanding adherence to food safety standards.

Climate change exacerbates these challenges, impacting different agricultural value chains and regions differently. Export-oriented value chains face heightened concerns due to stricter standards in international markets. Open field plants, are particularly vulnerable to climate change, affecting both yield and quality. The Medicinal and Aromatic Plants (MAPs) and fruit and vegetable (F&V) value chains, which are key contributors to Albanian agrifood exports, are characterized by significant production and export growth. They rely heavily on adherence to quality standards to maintain their competitiveness in international trade. The sectors faces challenges related to climate change, affecting yield and quality.

The study provides insight relevant to UNIDO for its quality support interventions, and reflect the needs and the developments of the agrifood sector in general and MAPs specifically, related to climate change. The analysis is based on secondary data as well as primary data collected through a structured survey with agriculture extension experts and a structured survey with MAPs farmers.

► Climate change impact on agriculture sector and implications with focus on quality

Recent studies support the fact that climate changes have been manifested through various phenomena that affect various products, such as: spring frost, hails, floods, prolonged droughts and excessive and unequal distribution of precipitations. Climate change has resulted in several notable effects including withering of plant parts due to extreme low or high temperatures while strong temperature oscillations have negative effects on quality and yield. Other phenomena include early blossoms of flowers, diffusion of diseases, physical damage from heavy rainfall, harvesting season changes. Climate change is a major factor that causes plant diseases and infections to spread more widely, resulting in an increase of using pesticides to protect crops which has a great impact on the environment and human health.

Climate change impacts mostly “smallholder” farmers (more than 4/5 of farms in Albania are considered small farms) given that by default they have limited capacities and resources. Smallholders have a high need for

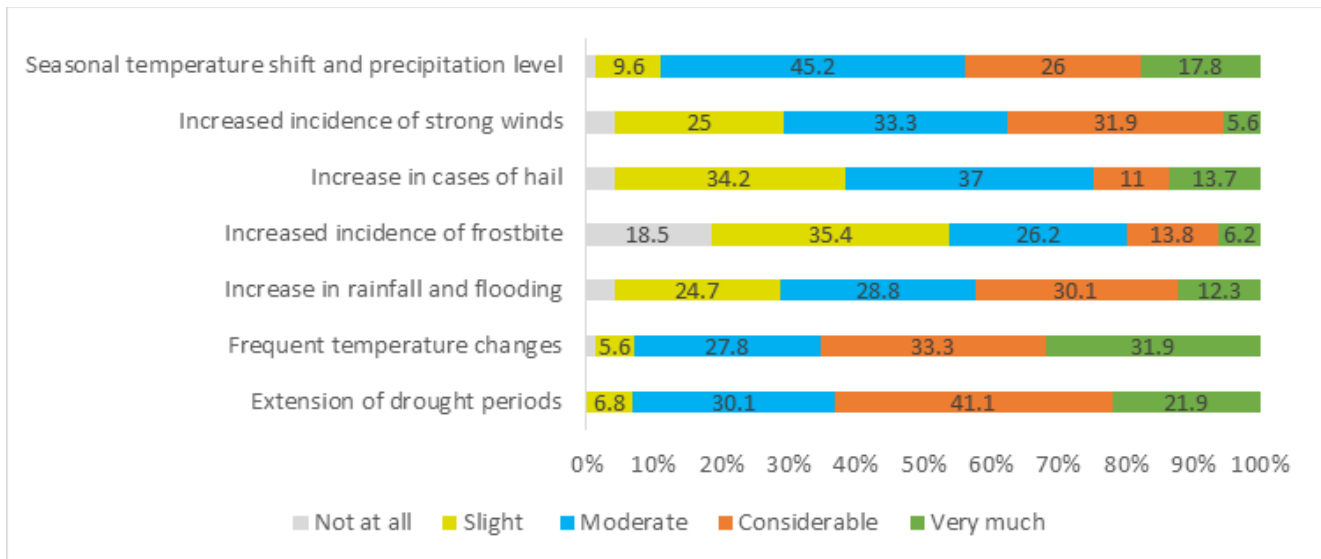
information and advice, thereby the role of agriculture (public and private) advisory /extension services (experts) is important.

A significant portion of surveyed agriculture extension staff/experts consider themselves either informed or well informed about the effects of climate change on agriculture. Given the nature of audience (experts) the fact that most of them are not well informed it implies that there is a great need to improve awareness and information among the community of agriculture experts in Albania.

The vast majority of surveyed experts noticed signs of climate change in the last 10 years in the area where they work (extension experts are located in different regions of Albania). The survey findings suggest that drought periods, frequent temperature changes, rainfall and flooding incidence of strong winds have been perceived as having undergone considerable increase in the past decade.



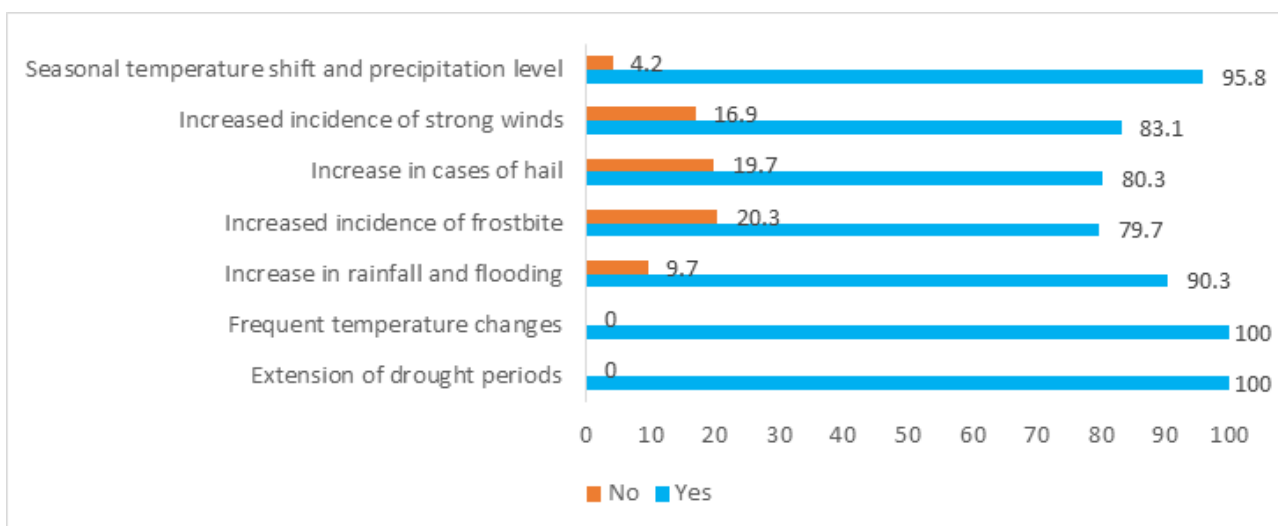
Figure 1. Answer to the question “Please indicate if there are signs of increase of the following events during the last 10 years in the area where you work”.



Source: Experts/extension survey (2023)

The overwhelmingly positive responses to whether these trends are signs of climate change suggest a strong consensus among the respondents. All of them (100%) believe that extended drought periods and frequent temperature changes are due to climate change – similar views are observed also for the increase in rainfall and flooding (90.3% of the respondents), seasonal temperature shifts and precipitation levels (95.8%), increased incidence of strong winds (83.1%), increases in hail occurrences (80.3%), and increased incidence of frostbite (79.7%).

Figure 2. Share of experts admitting that the main highlighted weather events are signs of climate change

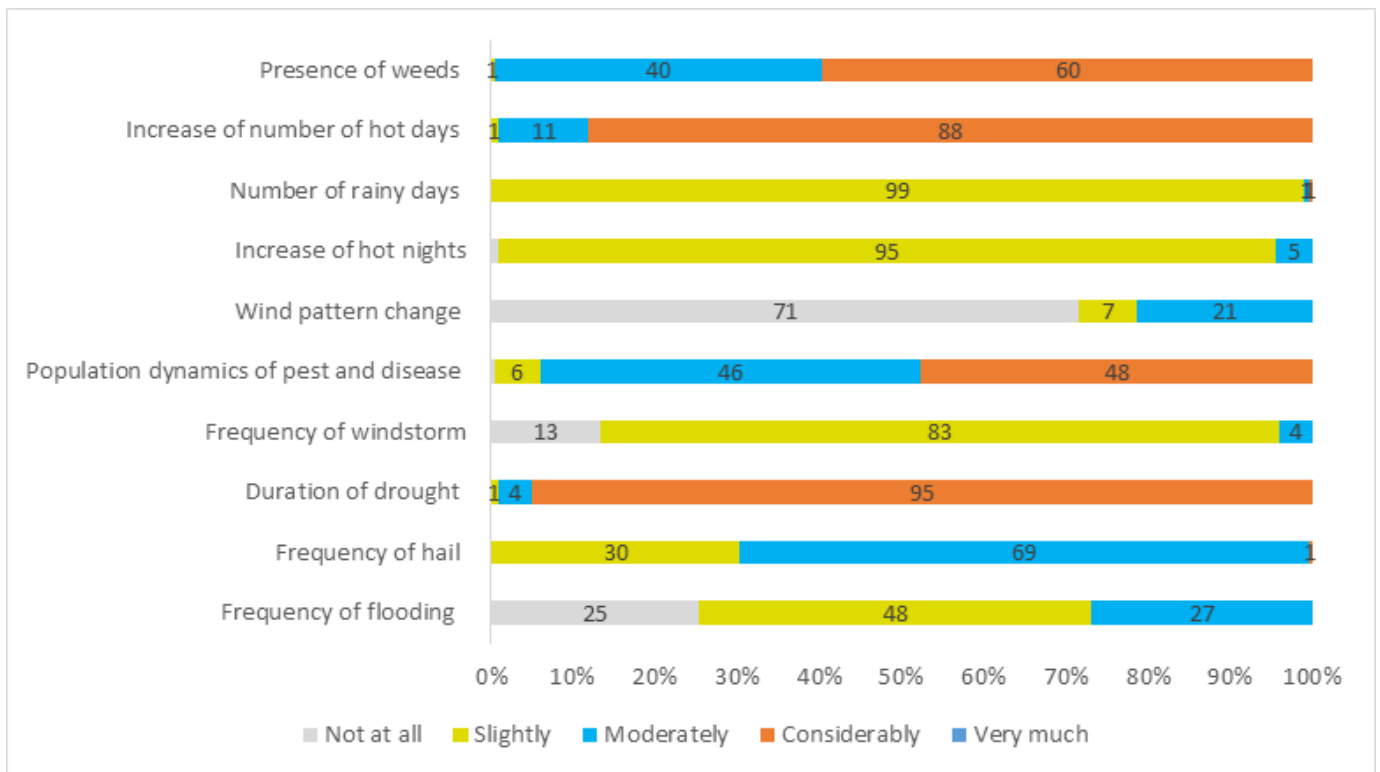


Note: Answer to the question: Do you think that the trends in these highlighted events are signs of climate change?"

Source: Experts/extension survey (2023)

Most surveyed MAPs farmers (85.6%) are aware of climatic phenomena happening, revealing concerning patterns of climate change. Drought duration and number of hot days considerably increased according to surveyed MAPs farmers. Jointly to these phenomena, presence of weeds and frequency of pests and diseases increased their occurrence, with impact on crop yields and quality.

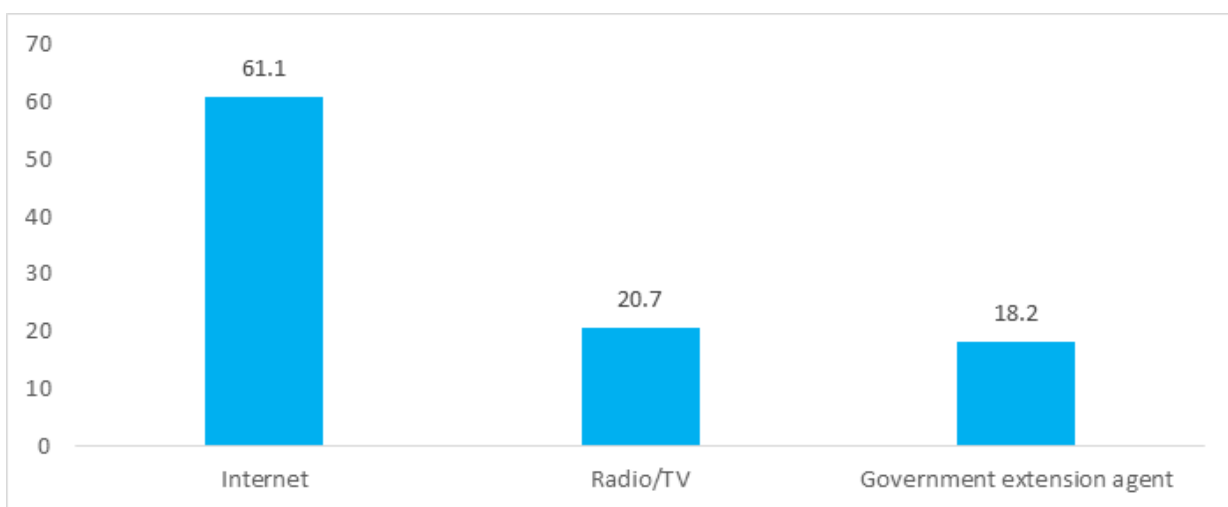
Figure 3. Answer to the question “How much have changed the following phenomena?” (percentage of respondents)



Source: Experts/extension survey (2023)

The weather information has become a very important factor for preventing shocks. The main source of climate information is climate web pages accessed via mobiles (61 percent of the respondents), followed by mass media (e.g. TV and radio) (21 percent) and government extension staff (18 percent).

Figure 4. Farmers’ main sources of weather information



Note: Answer to the question “Which are the main sources of climate information?” (percentage of respondents)

Source: MAPs farms survey (2023)



▶ Key institutional framework limitations and challenges

In Albania, the institutional framework for addressing climate change adaptation and disaster risk management encounters significant challenges due to its fragmented nature and lack of cohesion. This institutional setup is marked by fragmentation, resource constraints, sectoral approaches, and insufficient coordination. The complexities within the institutional structure stem from various factors:

- **Fragmentation and Coordination Deficiency:** Centralized coordination and collaboration among the diverse government bodies, agencies, and ministries responsible for climate change and disaster risk management are lacking.
- **Legal and Policy gaps:** Despite attempts to enact laws and policies concerning climate change and disaster risk, substantial gaps and inconsistencies persist within the legal and policy framework. For instance, while legislation may focus on mitigating greenhouse gas (GHG) emissions, adaptation measures may receive less explicit attention or even be overlooked entirely. This poses challenges to implementing comprehensive and coherent strategies for adaptation and mitigation.
- **Resource and Capacity Limitations:** Institutions engaged in adaptation and mitigation efforts suffer from inadequate resources, technical know-how, and capacity to effectively execute and integrate climate adaptation and disaster risk reduction measures. This resource deficit can impede monitoring, and evaluation endeavors, resulting in suboptimal outcomes.
- **Sectoral Approach:** Historically, adaptation and mitigation endeavors have been predominantly sectoral, with each sector independently addressing climate risks. This can lead to fragmented responses and missed opportunities for synergies and integrated solutions across sectors.
- **Lack of Public Awareness and Engagement:** Insufficient public awareness and participation in climate change adaptation and disaster risk management processes can undermine the effectiveness of institutional endeavors. Meaningful engagement and collaboration with communities, civil society organizations, and other stakeholders are imperative for the successful implementation and sustainability of adaptation and mitigation initiatives.

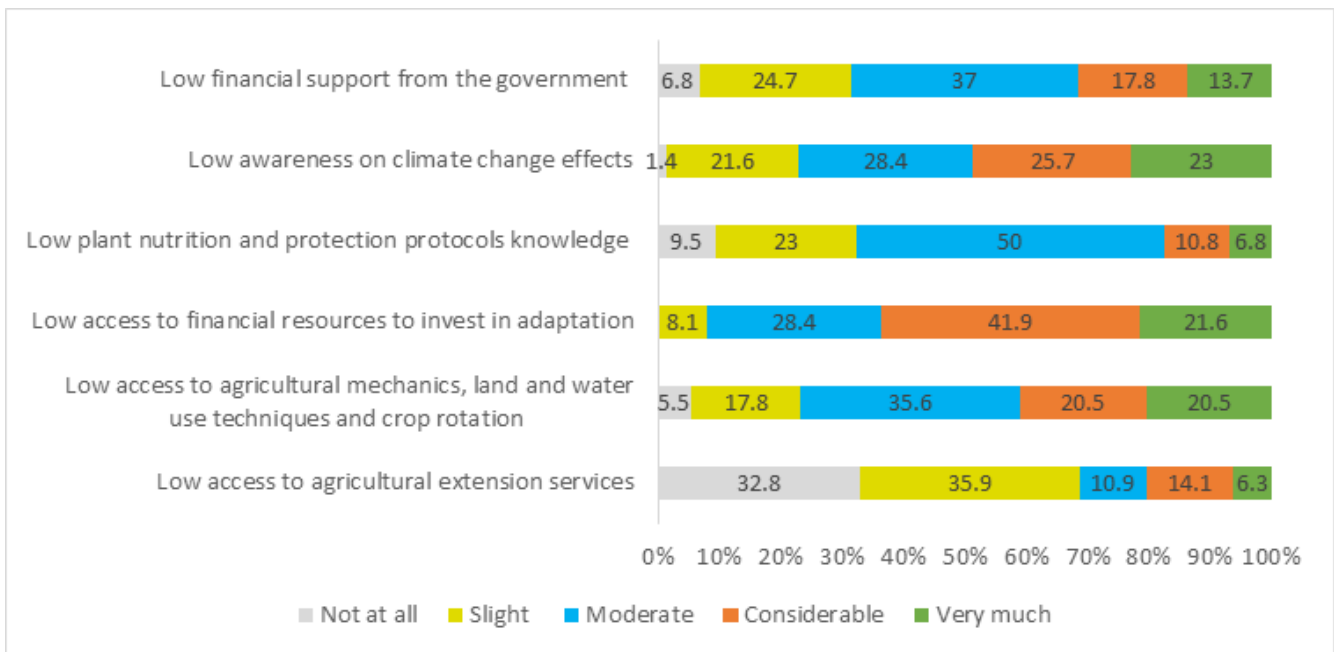


► Main challenges and needs

The survey with extension/experts shows that low access to agricultural extension services emerges as a significant obstacle, with varying degrees of perceived hindrance among respondents. Limited access to agricultural machinery, land and water use techniques, and crop rotation appear as a barrier to climate change adaptation. Low access to financial resources (including also financial support from government) for adaptation efforts poses a considerable challenge.

Moreover, a significant proportion of respondents' express concerns about their limited knowledge of plant nutrition and protection protocols, with 50% identifying this challenge as moderately hindering their adaptation efforts. Furthermore, respondents highlight a lack of awareness regarding the effects of climate change as a barrier.

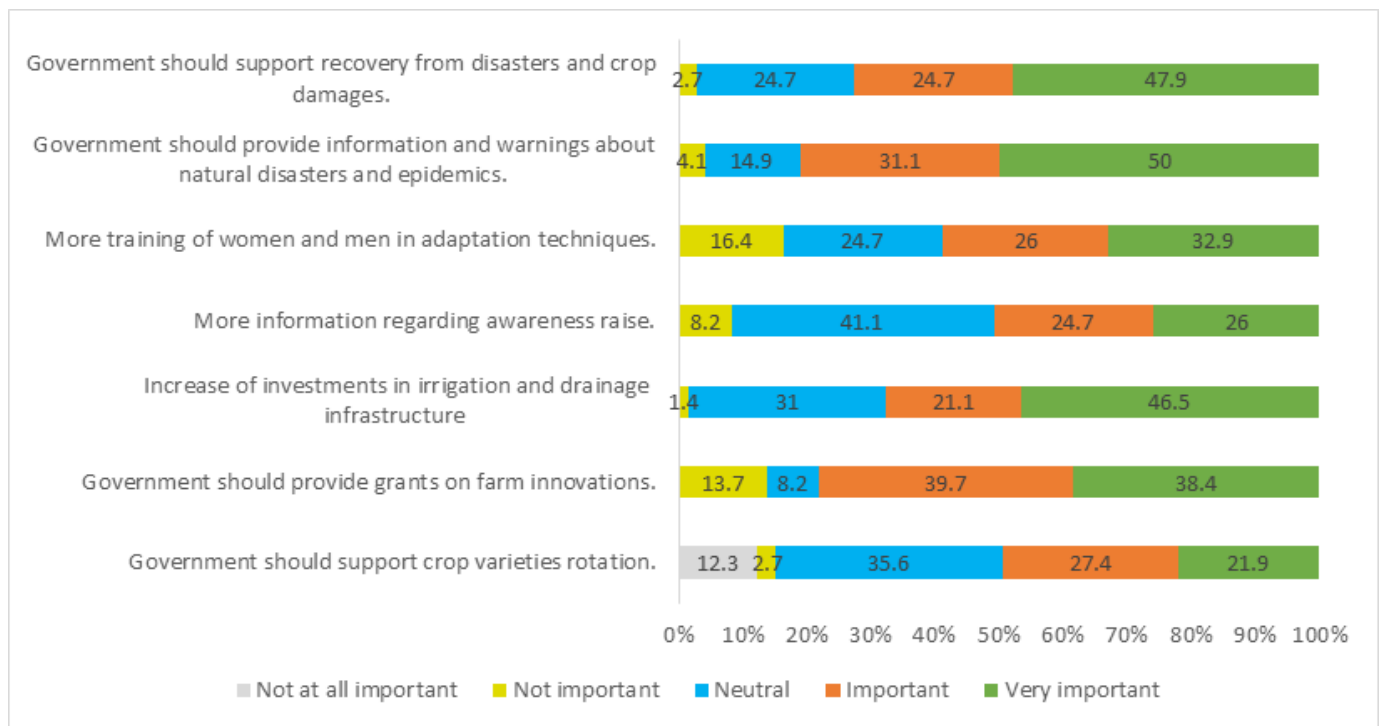
Figure 5. Experts' perceived challenges hindering responsive measures to climate change



Source: Experts/extension survey (2023)

Experts prioritize grants for innovations (38.4% very important) and investments in irrigation (46.5% very important) to mitigate climate impacts. Training in adaptation techniques is valued (32.9% very important, 26% important), emphasizing gender-sensitive approaches. Experts call for more support via grants for innovation in order to increase farmers technology adoption (38.4% very important). Government roles in disaster warnings (50% very important) and recovery support (47.9% very important) are crucial for resilience.

Figure 6. Experts level of agreement on necessary support policy in order to improve climate change adaptation capacities



Source: Experts/extension survey (2023)



The Way Forward

In response to the findings, a set of recommendations can be proposed to enhance climate change adaptation and resilience within the Albanian agricultural sector.

1 Evidence-based policy-making and institutional cooperation

Improve cooperation between various institutions related to climate change and follow evidence-based policy-making and alignment with the EU acquis. The Sofia Declaration on the Green Agenda for the Western Balkans, adopted in 2020, aims to tackle the challenges of climate change and the green and digital transition. It assists Western Balkan countries/territories in aligning their environmental regulations with the European acquis. The Green Agenda for the WB is based on the European Green Deal and the related Economic and Investment Plan for the Western Balkans. The issue of climate change in agriculture is increasingly addressed in relevant policy documents of the WB countries. Translating the strategic objectives into practice, however, remains a challenge.

2 Supporting innovation and advisory services

Support research and innovation and promote good agricultural practices through new forms of financing and cooperation. Continued research into climate-resilient crop varieties, sustainable agricultural practices, and adaptation strategies is essential for mitigating the effects of climate change on crop quality. The situation calls for the promotion of these measures through an improved coordination and operation of an Agriculture Knowledge Information System (AKIS). More funding should be provided in order to conduct applied research. The MARD can establish EIP-Agri-like Operational Groups in order to solve issues related to crop variety selection and plant protection. The Agricultural University of Tirana (AUT), should strengthen academic capacities for applied research (e.g. PAs control and climate change aspects), promote quality and provide testing services. To bolster agricultural resilience to climate change, collaboration between national hydro-meteorological services, the AUT, and regional agricultural extension centres is proposed. Through this service, agricultural extension centres can supply farmers with climate data tailored to their regions, aiding informed decisions on crop management. Training for agriculture advisory services and IT infrastructure upgrades at extension centres will ensure the provision of timely climate information and support, meeting the evolving agricultural demands.

Enhance advisory services by investing in institutional capacities and human resources: Climate change has put many experts in a difficult position; many feel unable to advise farmers on how to tackle risks. There is a desperate need for expertise, including in areas of plant protection, soil assessment and suitability of climate conditions. It seems that certain crop varieties (e.g. vineyards), that could once be grown in a particular region, are no longer suitable, and vice versa. This is threatening the rich biodiversity of the country, which needs to be preserved. Therefore, there is a need to prepare a detailed national and regional mapping of suitable varieties and to provide producers and local experts with the advice and knowledge they need. Implementing training programs and capacity-building initiatives will equip farmers with the necessary skills and knowledge to implement climate-smart agricultural practices effectively.

Introduce Climate-Smart Agriculture (CSA) and promote digital transformation as another mitigating intervention: CSA is an approach that aims to sustainably increase agricultural productivity, adapt to climate change, and reduce greenhouse gas emissions. It encompasses many of the practices mentioned above, along with others like precision agriculture and agro-ecology. Although it is one of the key points in the newly adopted Strategy for Agriculture, Rural Development and Forestry (SARDF 2021-2027) there are no measures to support the establishment of a digitalised monitoring system and the use of digital solutions for water conservation and climate warning.

Expand the use of Integrated Pest Management (IPM) strategies, which can help control pests and diseases without relying heavily on chemical pesticides, which can have adverse environmental impacts. This can include using biological controls, crop rotation, and resistant crop varieties. Introduction of crop varieties that are more resilient to climate change can help maintain crop quality and yields. This includes varieties that are drought-tolerant, heat-tolerant, or resistant to pests and diseases that may become more prevalent due to changing climate conditions.

Support sustainable practices: Crop diversification is required to cope with the risks associated with temperature fluctuations and moisture requirements, thereby reducing the impact of extreme weather events. Water management practices and soil management practices (conservation tillage, cover cropping, and organic farming) can improve crop yields in times of drought and maintain soil structure, fertility, and water retention, making crops more resilient to climate change. Providing grants and incentives for farm innovations, such as developing drought-resistant crop varieties, sustainable land management practices, and integrated pest management strategies, can significantly contribute to adaptive strategies.

Promote the perseverance of biodiversity and the use of autochthonous varieties and conserve endangered wild flora: There is evidence that some autochthonous varieties perform better under the stress of climate change. ATTCs can play an important role in cooperation with AUT, to demonstrate/pilot new technologies and promote best practices. Furthermore, local governments play a crucial role in safeguarding local resources, such as pastures and forest areas, and in motivating users to adopt sustainable practices. Capitalizing on this opportunity requires mobilizing applied research in coordination with the engagement of extension services and capacity building. In the case of MAPs, in order to mitigate future vulnerabilities to climate change, it is crucial to conserve the endangered wild flora. This will include the cultivation of MAPs by adapting the selection of varieties and cropping cycles. Agroforestry practices and other nature-based solutions are recommended to integrate species that are well adapted to the local habitat and capable of thriving under the new climatic conditions. Autochthonous varieties also represent a market potential considering (agri)tourism growth trends.

3 Investments / financial support

Improve irrigation and drainage systems. There is a pressing need to enhance infrastructure, particularly through increased investments in irrigation and drainage systems. This step aims to mitigate the impacts of water scarcity and flood events.

Develop measures to reduce losses: Providing risk coverage through crop insurance is crucial, and it should also include incentives to develop new services and improve access to them. Currently, there is no functional crop insurance service in Albania. Despite efforts made to support the provision of this service in 2018 by MARD through a support measure from ARDPF, there was no demand or supply from insurance companies for this service.

Improve post-harvest facilities and logistics. This is the case for the whole horticulture sector in general, and for MAPs specifically – for the latter, there is a need for improved storage (to avoid contamination and preserve quality) and drying facilities and basic sorting/cleaning equipment and machinery. Given the climate change, exposure to extreme temperatures, draughts and heavy rains, having proper storage and drying facilities has become paramount. Support for using solar power to dry MAPs can be considered, benefiting from recent pilot initiatives.



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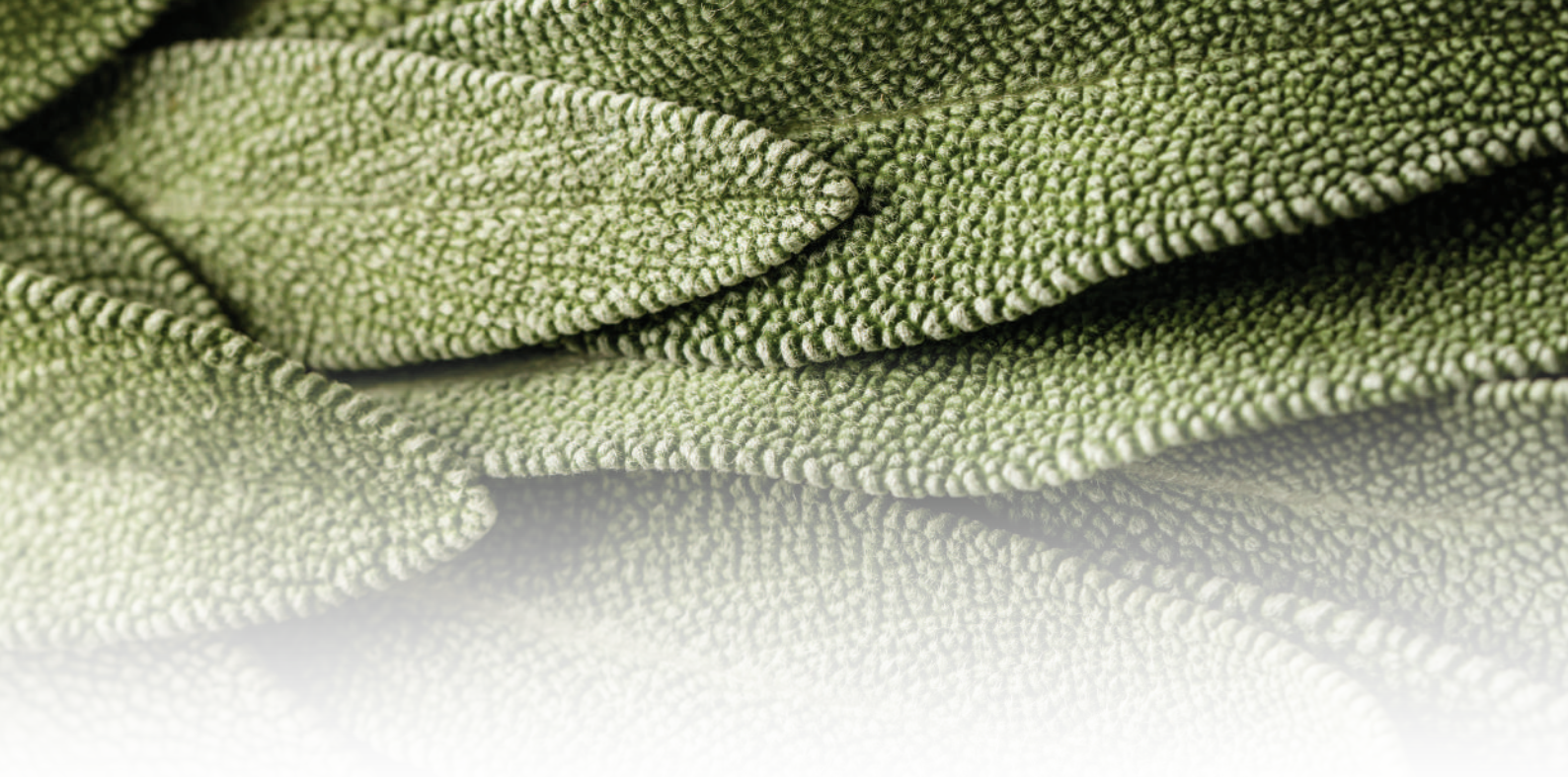
Improve Quality Infrastructure (QI) and associated services

Improving quality infrastructure and associated services is crucial to mitigate the impact of climate change on quality. The Quality Infrastructure System (QIS) should be adjusted to address these quality implications. Robust QIS better position developing economies to achieve sustainable development by increasing prosperity, meeting the needs of people, and protecting the planet. In turn, a well-functioning, internationally harmonized and recognized QI system is essential for climate protection, as QI provides confidence not only for the assessment of the impact of services and products on our climate, but also for monitoring government commitments toward international agenda and conventions such as those emerging from the Paris Agreement, as well as from the Sustainable Development Goals (SDGs), especially Goal 13.

Standards play a vital role in addressing climate change by supporting sustainability initiatives, such as environmental management and carbon footprint reduction. Voluntary Sustainability Standards (VSS) are guidelines adopted voluntarily to demonstrate commitment to sustainable practices, covering environmental, social, and economic aspects.

It is important to promote metrology, which is essential for understanding and monitoring climate change, and to enhance accreditation, develop laboratory infrastructure, and increase the accessibility of laboratory services. Additionally, there should be efforts to boost inspection capacities. Strengthening certification bodies is also crucial: certification confirms compliance with regulations and standards related to environmental and energy management, as well as carbon footprint measurements. The absence of locally accredited certification bodies, for some certifications (e.g. GlobalGAP), exacerbates the issue, leading to increased service costs and reduced monitoring capabilities. This is important as several voluntary certifications prioritize climate change and environmental protection measures.





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